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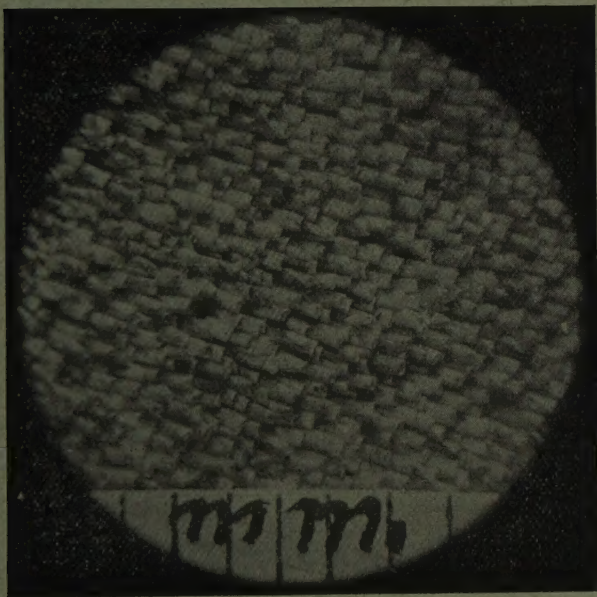
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NO. 81

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W. A. KELLERMAN, Ph. D.

OHIO STATE UNIVERSITY



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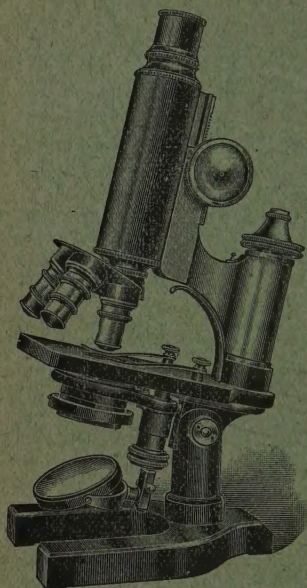
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W. A. Kellerman, Columbus, Ohio

Mycological Bulletin

No. 81

W. A. Kellerman, Ph. D., Ohio State University.

Columbus, Ohio, September, 1907.

Last year a paper was published in the Memoirs of the Torrey Botanical Club, New York, by H. J. Banker, a student of the Hydnums. The treatment amateurs at least would regard as revolutionary, and this suggests that a number of the Bulletin be devoted to the subject as there presented. No illustrations were included in the paper. The substance is given below.

NOTES FROM MUSHROOM LITERATURE. VII.

W. A. KELLERMAN.

The paper that will be discussed here is entitled: A Contribution to a Revision of the North American Hydnaceae, by Howard James Banker. It was published as No. 2, Vol. 12, of the Memoirs of the Torrey Botanical Club.

Professor Banker is the first American botanist to take a hand in the splitting up of the old genus *Hydnum*. Several European mycologists have undertaken the task, some of their work being accepted in the paper under discussion.

After this carving out of the Linnaean genus *Hydnum* the numerous genera, which Professor Banker recognizes, there remain only six of the American species, namely *Hydnum albo-magnum*, *Hydnum album*, *Hydnum repandum*, *Hydnum caespitosum*, *Hydnum washingtonianum* and *Hydnum sublamellosum*.

A "Hydnum" then to be a true *Hydnum*, must be *terrestrial*, *mesopodous* [*i. e.*, with a stipe or stem attached at the middle of the pileus], and *fleshy*; the plants are white, red or yellow; and the spores are smooth, not roughened.

A list is here compiled to show the new names proposed for the North American species:



Fig. 262. FIS-TU-LI'-NA HE-PAT'-I-CA. Beefsteak fungus. Edible. This is a soft fleshy, red species belonging to the family *Polyporaceae*; but the tubes are separate and free—see Fig. 264 of the tubes magnified. It grows in decaying parts as crevices of trees and stumps, from midsummer to early autumn. It is a widely distributed species; rarely common in any region and not often abundant. Photographs were made from specimens collected at Sugar Grove, Ohio.

NEW NAMES FOR OLD HYDNUMS

as given in Professor Banker's Monograph

- Hydnum abietinum*—now given as *Heridium laciniatum*.
Hydnum adustum—now given as *Steccherinum adustum*.
Hydnum agaricoides—now given as *Steccherinum agaricoides*.
Hydnum albonigrum—now given as *Phellodon alboniger*.
Hydnum atroviride—now given as *Sarcodon atroviridis*.
Hydnum aurantiacum—now given as *Hydnellum floriforme*.
Hydnum blackfordae—now given as *Sarcodon blackfordae*.
Hydnum boreale—now given as *Hydnellum suaveolens*.
Hydnum brunneo-leucum—now given as *Grandiniodes flavum*.
Hydnum caput-ursi—now given as *Heridium caput-ursi*.
Hydnum carbunculus—now given as *Hydnellum carbunculus*.
Hydnum cervinum—now given as *Sarcodon imbricatus*.
Hydnum compactum—now given as *Hydnellum floriforme*.
Hydnum conchiforme—now given as *Steccherinum ochraceum*.
Hydnum conrescens—now given as *Hydnellum conrescens*.
Hydnum conigenum—now given as *Hydnellum conigenum*.
Hydnum coralloides—now given as *Heridium coralloides*.
Hydnum coriaceo-membranaceum—now given as *Phellodon coriaceo-membranaceus*.
Hydnum crispum—now given as *Heridium coralloides*.
Hydnum cristatum—now given as *Sarcodon cristatus*.
Hydnum croceum—now given as *Heridium croceum*.
Hydnum cyathiforme—now given as *Phellodon tomentosus*.
Hydnum cyaneotinctum—now given as *Hydnellum cyaneotinctum*.
Hydnum daviesii—now given as *Steccherinum ochraceum*.
Hydnum delicatum—now given as *Phellodon delicatus*.
Hydnum discolor—now given as *Steccherinum agaricoides*.
Hydnum erinaceus—now given as *Heridium erinaceus*.
Hydnum fasciatum—now given as *Phellodon fasciatus*.
Hydnum fasciculare—now given as *Heridium fasciculare*.
Hydnum fennicum—now given as *Sarcodon fennicum*.
Hydnum ferrugineum—now given as *Hydnellum sanguinarium*.
Hydnum flabelliforme—now given as *Steccherinum rhois*.
Hydnum flavum—now given as *Grandiniodes flavum*.
Hydnum floriforme—now given as *Hydnellum floriforme*.
Hydnum fuligineo-violaceum—now given as *Sarcodon fuligineo-violaceus*.
Hydnum glabrescens—now given as *Steccherinum reniforme*.
Hydnum graveolens—now given as *Phellodon graveolens*.
Hydnum humidum—now given as *Hydnellum humidum*.
Hydnum hybridum—now given as *Hydnellum floriforme*.
Hydnum imbricatum—now given as *Sarcodon imbricatus*.
Hydnum laciniatum—now given as *Heridium laciniatum*.
Hydnum laevigatum—now given as *Sarcodon laevigatus*.
Hydnum nigrum—now given as *Phellodon niger*.

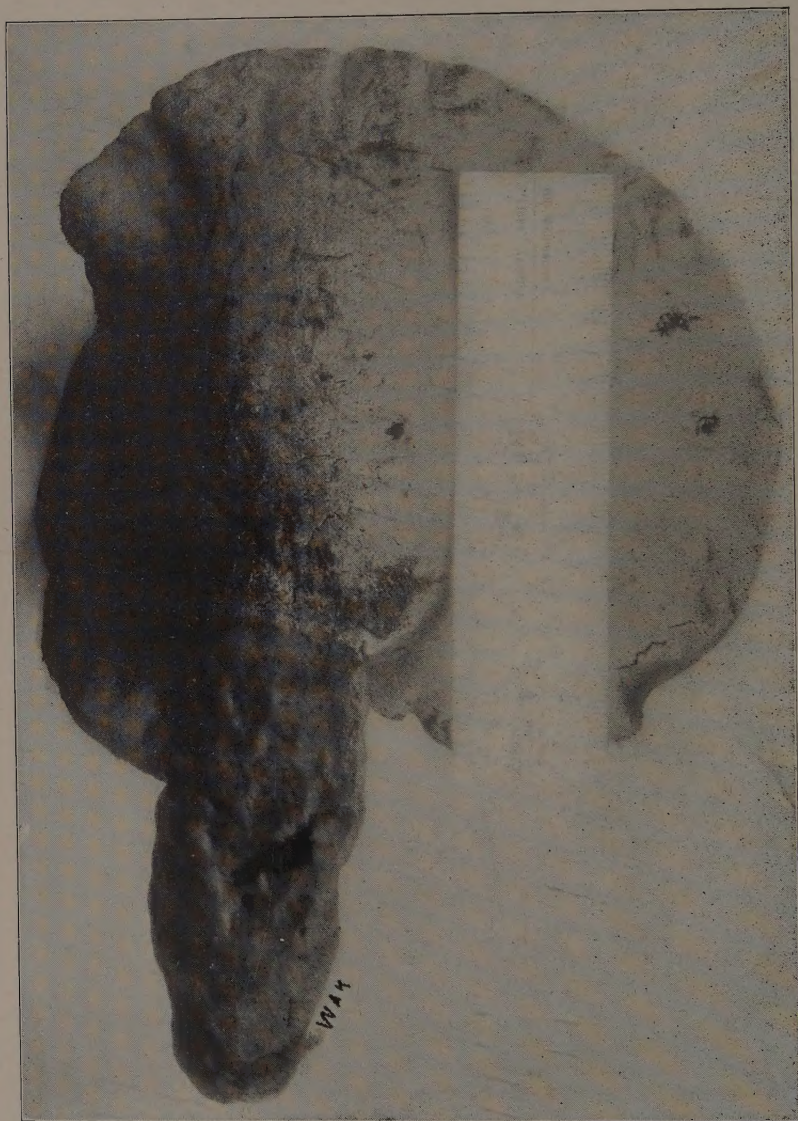


Fig. 263. FIS-TU-LI'-NA HE-PAT'-I-CA. The Beefsteak fungus. The same plant shown in Fig. 262, there the upper, here the lower side. Unfortunately the tubes forming the fruiting surface cannot be seen, but Fig. 264 shows them plainly.

Hydnum ochraceum—now given as *Steccherinum ochraceum*.
Hydnum parasiticum—now given as *Steccherinum strigosum*.
Hydnum plumarium—now given as *Steccherinum ochraceum*.
Hydnum plumarium—now given as *Steccherinum plumarium*.
Hydnum pulcherrimum—now given as *Steccherinum pulcherrimum*.
Hydnum putidum—now given as *Phellodon putidus*.
Hydnum ramosum—now given as *Heridium laciniatum*.
Hydnum reinforme—now given as *Steccherinum reinforme*.
Hydnum reniforme—now given as *Steccherinum reinforme*.
Hydnum rhois—now given as *Steccherinum rhois*.
Hydnum scabripes—now given as *Sarcodon scabripes*.
Hydnum schiedermayeri—now given as *Heridium croceum*.
Hydnum scrobiculatum—now given as *Hydnellum scrobiculatum*.
Hydnum septentrionale—now given as *Steccherinum septentrionale*.
Hydnum spongiosipes—now given as *Hydnellum velutinum*.
Hydnum stratosum—now given as *Leaia stratosa*.
Hydnum strigosum—now given as *Steccherinum strigosum*.
Hydnum suaveolens—now given as *Hydnellum suaveolens*.
Hydnum tinctorium—now given as *Echinodontium tinctorium*.
Hydnum tomentosum—now given as *Phellodon tomentosus*.
Hydnum vellereum—now given as *Phellodon vellereus*.
Hydnum velutinum—now given as *Hydnellum velutinum*.
Hydnum zonatum—now given as *Hydnellum zonatum*.

The purpose and nature of the monograph, the general remarks, and the distribution of the Hydnaceae will be given in Professor Banker's own words, which are as follows:

"The following paper is intended to include a revision of all the pileate forms of the family of the Hydnaceae, which have been found on the continent of North America and its adjacent islands north of the Isthmus of Panama. A few resupinate forms have been included by reason of their close relationship to pileate forms, but in general they have been excluded. The reason for this arbitrary limitation of the scope of the work is the impossibility of adequately treating the resupinate forms and referring them to their proper species until such time as the Berkeley types can be thoroughly examined by one familiar with our American plants.

"The Hydnaceae represent one of the smaller families of the Basidiomycetes, there being not more than five hundred known species in the family, and of these not more than two hundred have been reported within the geographical limits of this paper. With a few exceptions the species are not common and generally appear to be quite local in distribution. The task, therefore, of getting suitable material on which to base a revision of the family has proved more difficult than was at first anticipated. Nor are the herbaria of collectors as helpful as one would have a right to expect. The published descriptions of species of this family are frequently incomplete and inadequate to fully discriminate the species, so that it is possible often to include several different species under the one description. Collectors are inclined to refer specimens according to some conspicuous feature, such as a scaly pileus or a zonate pileus, and then pay little attention to other apparently minor characters. Owing to the local character of the distribution of these plants, combined with the comparative rarity with which they are found, few discover that the plants

which they are referring to a given species are very different from the plants which others are referring to the same species. Moreover, assuming that the species is common and well known, no field notes are considered necessary. As a result much confusion has arisen in our conception of these species. Occasionally mycologists, who have received specimens from all parts of the country, have noted that certain species present remarkable variations, but as the material thus received is usually fragmentary, without suitable notes, and is received only at rare intervals, they have generally contented themselves with noting that the form is an unusual one.

"In the extensive collections of the New York Botanical Garden, brought together from very many different sources, the confusion in species is very evident. This is conspicuously seen in the forms referred to *Hydnum imbricatum* L. and *H. zonatum* Batsch. As to the former species, nearly everything with a scaly pileus has been referred to it, while the latter has been made to include almost everything with a zonate pileus.

"While herbarium specimens often clearly show that they represent distinct species, so great is the change that these plants undergo in the process of drying that one rarely feels justified in attempting a description of new species from such material without satisfactory field notes. On the other hand, the securing of fresh material or at least of ample and accurate field notes is a difficult and discouraging task. During six years of careful watching for specimens of the *H. imbricatum* allies, it has been the writer's fortune to find but two of the scaly-capped forms in the field; likewise but one of the forms commonly referred to *H. zonatum*, has come within his observation. Of more than forty specimens found in the her-

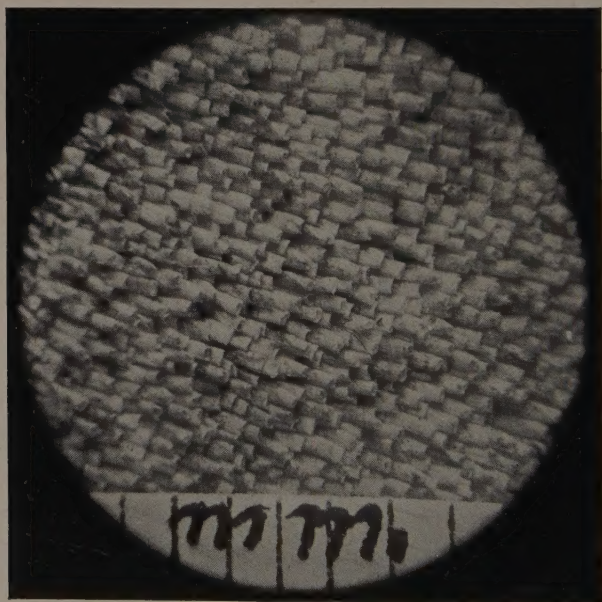


Fig. 264. The tubes forming the fruiting surface of FIS-TU-LI'-NA HE-PAT'-I-CA, considerably magnified as shown by the millimeter scale. See Figs. 262 and 263.

baria referred to these two species, not one was accompanied by descriptive notes that were of any value. Yet we have at least a half dozen good species here represented, could the distinctive characters be clearly established.

"The species of this family are not only comparatively rare and local in distribution, but they are often intermittent in appearance. The writer once found three different species in a space not over ten feet square, and a fourth in the same woods a short distance away. But not one of the four was found anywhere in that region in the next four successive years, although the ground was searched over repeatedly each year.

DISTRIBUTION.

"The geographical distribution of these plants appears to be largely influenced by latitude. But collections of Basidiomycetous fungi from the region west of the Mississippi river have been so few and incomplete that general conclusions respecting distribution in this region can not be confidently drawn. The following areas may be recognized as possessing each a characteristic and somewhat distinctive hydneaceous flora. (1) The northeastern United States south to North Carolina and Tennessee and west to the Great Plains. (2) The Southern States west to Louisiana. (3) The Gulf region including the West Indies and the immediate borders of the Gulf. (4) The north Pacific coast including Oregon and Washington. It seems probable that Canada and northern New England to Greenland may represent another distinct floral distribution, but collections in this region have been too meager to suggest more than a possibility. These remarks on distribution are based on specimens actually seen by the writer, and do not include the various species reported in catalogues and local floras without accompanying specimens. The material examined has come chiefly from the following states: Maine, Massachusetts, Connecticut, New York, New Jersey, West Virginia, Ohio, Indiana, Kentucky, Alabama, Louisiana, Cuba, Honduras, Oregon, Washington. This study of distribution cannot be satisfactorily supplemented by published local floras, for in consequence of the confused conception of species in this family, such lists are wholly unreliable except when verified by actual specimens, and these are often lacking. A comparison of two collections on which such floras have been based, quickly reveals how utterly untrustworthy are these lists of species as a means of determining distribution. The plants referred to *Hydnum imbricatum* by Alabama collectors are totally distinct from the plant referred to the same species by the New England botanists. Professor Earle has noted that *Hydnum repandum* as collected by him in Connecticut, was a very different thing from the plant of that alliance with which he had been acquainted in Alabama.

"It is hoped that the present contribution may lead to a clearer conception respecting the species of this family and be a means of stimulating a more exact study of the distribution of these plants. It can hardly be expected that all confusion has been removed or that all errors have been avoided. The source of many of our present difficulties is to be traced back to the work of early European botanists, whose material is either inaccessible or has long since passed into an irrecoverable oblivion. The author believes that in the majority of cases, with respect to the species included in this paper, he has formed a clear conception of them in his own mind and has endeavored to present that conception as definitely and distinctly as he was able in the accompanying descriptions and synopses. Whether he has in all cases made an absolutely correct determination, especially in the case of species referred to old European types, he cannot state with complete confidence."

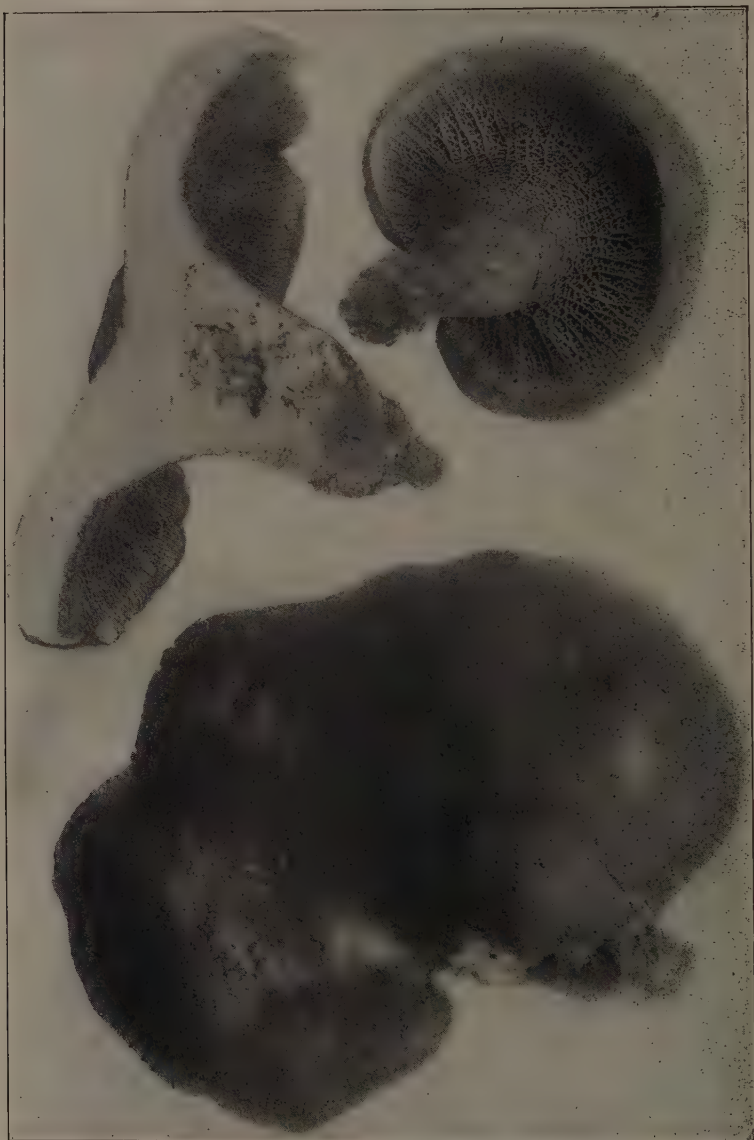
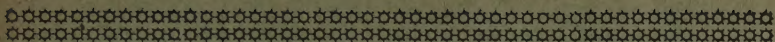
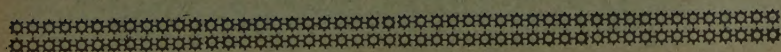


Fig. 265. BO-LE-TI'-NUS PO-RO'-SUS. A fleshy reddish-brown plant, belonging with the preceding species illustrated in this Number to the family *Polyporaceae*. The hymenium or fruiting layer is described as composed of broader radiating lamellae connected by very numerous more narrow anastomosing branches or partitions and forming large angular pores. Collected in the woods at Sugar Grove, Ohio.

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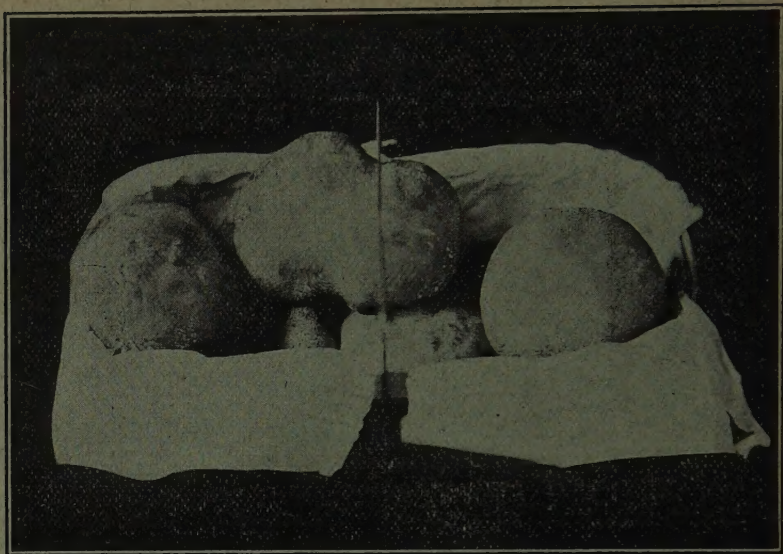
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